

What is claimed is:

1. An apparatus for molding panels having cellular structure comprising:
  - a. a lower pan having a base defining a generally planar upper surface, wherein a plurality of roughly vertical channels extend into said upper surface of said base in a configuration of the desired cells of said cellular structure;
  - b. retaining walls around the peripheral edges of said lower pan, wherein said retaining walls extend higher than said generally planar upper surface of said base; and
  - c. a lid having roughly planar upper and lower surfaces sized to be received within said retaining walls around said lower pan.
2. The apparatus recited in claim 1, wherein said channels are in the configuration of hexagonal honeycombs.
3. A method for manufacturing panels having cellular structure comprising:
  - a. loading thermoplastic resin or other moldable material into a lower pan element having a base defining a generally planar upper surface, wherein a plurality of roughly vertical channels extend into said upper surface of said base in a configuration of the desired cells of said cellular structure, and having retaining walls around the peripheral edges of said lower pan, wherein said retaining walls extend higher than said generally planar upper surface of said base;

- b. placing a lid element having roughly planar upper and lower surfaces on said lower pan within said retaining walls around said lower pan;
- c. subjecting the loaded upper and lower elements to elevated heat and pressure; and
- 5 d. permitting the loaded upper and lower elements to cool.
4. The method of manufacture recited in claim 3, further comprising the step of applying elevated pressure during the cooling process.
5. A method of manufacturing a panel having roughly continuous outer surfaces comprising:
- 10 a. loading a sacrificial molded piece having cellular structure into a lower hollow pan element;
- b. loading thermoplastic resin or other moldable material into said pan over said sacrificial molded piece;
- c. placing a lid element having roughly planar upper and lower surfaces on said lower pan element;
- 15 d. subjecting the loaded upper and lower elements to elevated heat and temperature; and
- e. permitting the loaded upper and lower elements to cool.
6. The method of manufacture recited in claim 5, further comprising the step of applying elevated pressure during the cooling process.
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